

ABSTRACT

The present invention provides a communication network system having a central management device and a plurality of
5 local area network systems. Each of the plurality of local area network systems has a router and a terminal. The central management device encrypts a common key by using each public key of each router, and sends the encrypted common key to each router. The router decrypts the encrypted common key sent from
10 the central management device by using a secret key of the router. The router encrypts communication data to be sent from a terminal in the router's local area network system to a terminal in another local area network system, or to be sent from the router to the central management device by using the common key,
15 and sends the encrypted communication data to another local area network or the central management device.

10053421, 011602